Testimony of

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Chairman Dorgan, Senator Domenici, members of the Subcommittee, I appreciate the opportunity to discuss with you the status of the Department of Energy's FutureGen program. Today I will summarize how we have restructured the program, describe the reasons for the restructuring, and then discuss in greater detail how we intend to carry out the program.

COMMITMENT TO CLEAN COAL

The United States Government is on an ambitious course to develop and deploy clean energy solutions that are technologically feasible, commercially scalable, and economically sustainable to increase America's energy security while reducing greenhouse gas emissions.

America's energy production, as you know, is heavily reliant on coal. Coal powered electricity generation accounts for roughly half of our domestic electricity mix and it is the most abundant of our domestic fossil fuels, with some estimates accounting for recoverable reserves of roughly 240 years at today's usage rates. Of course, the burning of this tremendous resource for electricity generation results in a release of emissions, including carbon dioxide, which is widely identified as contributing to climate change.

Last month President Bush announced a national goal to stop greenhouse gas emissions growth by 2025. This is a major step forward in the United States' ongoing efforts to address global climate change. Deploying advanced technology, including carbon capture and storage (CCS), will play a vital role in U.S. efforts to meet this goal. And advancing CCS technology in a commercial setting at an accelerated pace is a key objective of the restructured FutureGen initiative that I am here today to discuss.

The focus of our restructured FutureGen program remains the same as the original FutureGen approach announced in 2003 – to maximize the effectiveness of our national investment in clean coal research through demonstration of cutting-edge system integration of CCS technologies. The difference is that under the restructured program, our plan aims to support not just a single R&D testing laboratory, but rather to provide funding for commercial demonstration of integrated, advanced CCS technologies.

FutureGen is one of a suite of initiatives in our broad portfolio to advance clean coal technology. We are spurring investment in advanced fossil energy technology by supporting not only robust research and demonstration, but also making available nearly $10 billion in publicly-backed incentive measures through 2010, including:

- Up to $8 billion in loan guarantees to support advanced fossil energy projects that deploy the most promising new or significantly improved technology. In addition, the Department identified 3 integrated gasification combined cycle (IGCC) projects during its first round of loan guarantee solicitations that we have invited to submit a full application, on which we expect to begin our thorough financial and technical review this year.
- Portions of $1.65 billion in clean coal tax credits to reduce risks of early commercial deployment of advanced clean coal technologies.

U.S. investments to demonstrate the potential of clean coal technology, including carbon sequestration, are leading the world. Since 2001, the Administration has invested more than $2.5 billion in clean coal technology, including carbon sequestration projects and IGCC research that have advanced our understanding of the potential for clean coal technology. In addition, our budget request for next year is the largest amount requested for DOE's coal program in more than 25 years. This $648 million request will further the development of more efficient gasification turbine, and carbon capture technologies, drive innovations for existing coal power plants, and support large-scale CCS injection tests that are critical to demonstrating the safe and permanent storage potential in domestic geologic formations.

ORIGINAL FUTUREGEN APPROACH

As announced in 2003, the FutureGen program was originally envisioned as a large-scale engineering laboratory for testing new clean power, carbon capture, and coal-to-hydrogen technologies. It was conceived as a $950 million public/private venture with the taxpayers responsible for 74% of the total project cost and the private sector partners responsible for 26%. In December of 2005, the Department formally entered into a Cooperative Agreement with the FutureGen Alliance to build and operate the facility.

In 2007 the estimated cost of the project had increased roughly to $1.8 billion, of which, the Department would be responsible for at least $1.3 billion of the total cost, which we believed would only continue to escalate and would ultimately threaten funding for our other ongoing coal research and development projects. As such, Deputy Secretary Clay Sell and others immediately made our concerns known to the Alliance in a meeting in April of 2007; we began internal deliberation on changing the scope of the project that spring and summer; and we engaged Congress on the cost escalation issue relative to the Fiscal Year 2008 appropriations process. In fact, report language issued by this Committee stated, "the Committee is concerned about maintaining adequate funding for the core fossil energy research, development, and demonstration programs. The Committee has emphatically stated its intent and has warned that this R&D project must not be funded at the expense of the balance of the coal R&D program."

By the end of the summer, we began formal negotiations with the Alliance to limit taxpayer exposure, change the scope of the project, and ultimately restructure the terms of the Cooperative Agreement to make the project sustainable and viable.

CHANGING TECHNOLOGY, MARKETS, AND REGULATIONS

At the same time that the FutureGen project was experiencing dramatic cost escalation, significant changes were occurring (and continue to this day) within the technology field, the marketplace, and the regulatory environment. When FutureGen was first announced, few proposals for the construction of the highly technical IGCC coal plants existed. Today, in addition to the two IGCC plants currently operating on coal in Florida and Indiana, and one operating on pet-coke in Delaware, two newly proposed IGCC power plants have passed the permitting process (an AEP plant in Illinois and a Duke plant in Indiana)**,** and nearly 30 additional clean-coal plants of this type have been publicly announced and are in various stages of planning.

Carbon capture and storage technology has also made important strides since the original FutureGen program was launched in 2003. DOE's Carbon Sequestration program has developed a network of seven Regional Carbon Sequestration Partnerships to help demonstrate the technology, infrastructure, and basis for regulations necessary to implement large-scale carbon dioxide (CO_2) sequestration projects in different regions and geologic formations across the Nation. The Partnerships have estimated that U.S. geologic formations have the technical potential to store more than 600 billion metric tons of CO_2, the equivalent of more than 200 years of emissions from stationary fossil energy sources in the United States. The large-scale tests are a continuation of the 25 small-scale geologic storage tests that the Partnerships are implementing today and the characterization phase for these large scale injections that was successfully completed in 2005.

Those marketplace changes and technological advances are important, as is the recent trend of regulatory uncertainty. More and more, we are seeing states and communities say "No" to the construction of new coal-fired plants because of concerns over the carbon dioxide emissions they will produce, in addition to cost considerations. Further, some companies have become concerned about investing in coal plants, even those utilizing advanced technology, citing uncertainty about future regulations.

As a result of regulatory, economic and environmental concerns, we've seen 36 power plant cancellations and 14 postponements between January 2007 and March 2008. Collectively, these plants would have produced an estimated 37 gigawatts of electricity.

The marketplace is showing increased interest in beginning the deployment of commercial scale IGCC plants that could be coupled with carbon capture and storage technologies. As I see it, we need to use the FutureGen program to spur the use of this advanced technology and at a faster rate.

DECISION TO RESTRUCTURE FUTUREGEN

Returning to our decision to restructure FutureGen, after several months of discussions between DOE representatives and the FutureGen Alliance, it became evident that we could not reach agreement to revise the cost sharing arrangement for cost escalations in a manner that would limit in a reasonable way the Government's financial exposure on this project. Moreover, the Alliance insisted on leveraging major portions of its 26 percent contribution as debt against the entire project. Recognizing that our efforts to limit taxpayer exposure had been unsuccessful, we undertook a formal effort last December to reconsider the direction of the FutureGen Project, with the intent to build upon the technology advances in CCS and respond to the new market conditions,

while retaining and accelerating the original goal of finding a way to produce electricity from coal with dramatically lowered emissions into the atmosphere.

After much thought and consideration, I chose to restructure the FutureGen Project in order to improve the prospect of success for the commercial introduction of this technology within the increasingly urgent timeframe that the global situation requires. Without this intervention, I believe that the originally structured project would not have been sustainable—either politically or economically—and that, in order to bring the vitally important technology of commercial-scale CCS to the marketplace, a change in the project structure simply had to be made.

Unlike the original approach, the new plants are expected to operate commercially from the start and will provide a significant amount of electricity to our Nation's electric grid. This should help meet the Nation's rapidly growing demand for energy, while also demonstrating the commercial viability of permanently and safely storing carbon dioxide deep underground. These commercial plants should be able to be replicated around the world. The power sector should be able to plan and to finance new state-of-the-art coal facilities based upon cutting-edge system integration of CCS technologies at commercial plants under the restructured FutureGen program.

The restructured approach harnesses the power of private sector innovation, caps taxpayer exposure, and maximizes the impact of the Federal investment while substantially increasing our likelihood of success.

- Projects collectively will sequester at least double the amount of CO_2 expected from the original FutureGen program. The CO_2 generated by each plant will be sequestered in a saline formation.
- Projects will build on technological R&D advancements that have been made since the FutureGen concept was announced in 2003, which include laboratory–scale and small-scale carbon sequestration projects, through the Regional Carbon Sequestration Partnerships.
- Projects aim to hasten the timeframe for full-scale commercial operation of IGCC or other advanced technology coal power plants with CCS, enabling market use as soon as the plants are commissioned.
- This approach allows us to join industry in an effort to build clean-coal plants by providing funding for the addition of CCS technology to multiple plants.
- Projects will demonstrate the integration of CCS technology with advanced coal-power electricity generation, and seek to clear hurdles associated with early technology demonstration, thereby increasing the likelihood of rapid commercial deployment after 2015.
- Projects will help provide the technology basis to inform regulatory and technology development to the next generation of coal plants, many of which are facing cancellations due to concerns about the statutory and regulatory situations relating to greenhouse gas emissions.

To move this restructured FutureGen program forward, DOE launched an aggressive schedule for its implementation. The Department initiated this schedule with a Request for Information (RFI) to secure industry input in advance of a competitive solicitation to provide financial assistance for CCS demonstrations integrated with market-ready, commercial IGCC or

other clean technology coal power plants. The deadline for the public to submit comments was March 3, 2008. I am pleased to report to you that many of the approximately 50 parties that responded to the RFI expressed strong interest in conducting coal-based projects using CCS. The comments we received from the RFI provided valuable input into the development of a draft Funding Opportunity Announcement (FOA), the next stage of moving forward with the restructured FutureGen.

This week the Department issued a draft FOA, which will allow prospective applicants an opportunity to provide the Department additional input before we release the final FOA this summer. Following the issuance of the final FOA, we will evaluate the applications received, and hope to announce selections in December 2008. After successful completion of National Environmental Policy Act (NEPA) analyses, commercial operations could begin in 2015.

Conclusion

As I explained at the start, coal is a strategic, energy security resource. It is the most abundant, lowest-priced fossil fuel in the United States and will remain a major source of energy both at home and abroad well into this century. In 2007 alone, the U.S. consumed 1.1 billion tons of coal, and that figure is expected to grow to an estimated 1.5 billion tons by 2030, a 37 percent increase, according to DOE's Energy Information Administration.

The United States must continue to use coal, and we are committed to doing so more cleanly and efficiently while, at the same time, reducing its environmental impacts.

Our commitment to coal cannot waver, but to be successful in confronting the energy and environmental challenges before us, we cannot continue the business-as-usual approach. We must continually ask if we are using our taxpayer investments efficiently to achieve a cleaner, more sustainable, more affordable and more secure energy future. Where we are not, we must make changes. That is the difficult responsibility of leadership and that is exactly what we are doing with the FutureGen program. Understanding the series of events which led us to this decision is fundamental to appreciating the need for the restructuring and to cultivating and engendering support for the path forward. I hope that my testimony before this Committee will help shed light on these issues and illustrate the vital need to support and proceed with the revised project.

The Department appreciates the support we have received from Congress in our efforts to advance clean coal technologies, and we look forward to continuing that partnership. We hope you will join us in supporting the restructured FutureGen program.

I thank you, Mr. Chairman, for scheduling this hearing and for your interest in the new FutureGen program, and I look forward to answering any questions that you and members of the Subcommittee may have.